SELECTED CHARACTERISTICS OF DIFFERENT CATEGORIES OF FARMERS IN RALATION TO THEIR ADOPTION OF MUSTARD TECHNOLOGY

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Adoption of improved agriculture technology is essential in increasing the productivity of the major crops. In India the oilseed accounts for nearly 11 per cent of the cropped area and 10 per cent of the value of output from agriculture. Manipur is the only state in North-Eastern Hilly Region having vast plain area suitable for mustard cultivation. But its cultivation is limited to only 3600 ha during rabi season in 1992-93 as against the plain area of about 155402 hectares available for rice and other crops during 'Kharif' season in valley districts of the state which is much below the regional average (7636 ha) except Mizoram. The productivity is also low (500 kg/ha) to that of national average (745.35 kg/ha) (Anon, 1994-95; Chopra, 1996). This invisages that there is ample scope to enhance mustard production by way of increasing productivity as well as bringing more and more area under mustard cultivation which are not being exploited due to one or other reasons. With this background the present investigation was undertaken to find out the relevant factors associated with different categories of farmers affecting the adoption of mustard technology in the state.

METHODOLOGY

Imphal West and Thoubal districts of Manipur valley were selected for the study covering two blocks from each district. From each block, two villages were sampled randomly, thus, in all a total of eight villages were considered. All the farm families from each selected village were listed in a scending order of their size of land holdings. The total sample size was 240 i.e. 30 farmers from each village comprising of 15 small, 10 medium and 5 large holding farmers.

The record of data on the adoption of five important mustard technologies viz., land preparation and sowing, improved varieties, fertilizer application, irrigation pattern and plant protection measures (PPM) were measured on the basis of extent of adoption of these recommended practices. For the purpose, a specially teacher made type scale was used as per the recommendation of ICAR and others (Anon, 1991) and score was alloted. The maximum score of an individual could be obtained was 100, while the minimum was 30. The respondents from each group were classified according to the level of adoption in three categories viz., low, medium and high adoptors.

Fifteen independent variables such as age, education, size of family, family workforce, annual income, farm size, farm power, occupation, farm experience, knowledge level, economic motivation, risk taking ability, mass media exposure, contact with extension agencies and social participation were measured with the help of instruments developed and some readymade instruments were used with modification developed by different authors. Data were collected with the help of pretested interview schedule as developed for the purpose through personal interview. The correlation coefficients between each of the above variables with adoption index of mustard technology were calculated for different categories of farmers.

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RESULTS AND DISCUSSION

Majority of the respondents (74.58 per cent) were either young or middle aged. About 40 per cent respondents were illiterate and only 15.83 per cent were educated upto graduate level and above. Majority of the respondents (67.08 per cent) had more than seven members in their family and more than 60 per cent respondents had more than three family workers in their family. More than 55 per cent respondents belonged to low income group and about 80 per cent farmers had holding size upto 3 heactares. More than 65 per cent respondents had their primary occupation as agriculture, 20 per cent as agricultural labourers. animal husbandary, business and service and more than 15 per cnet as fisheries. majority of the respondents showed low to medium level of farm experience (71.25 per cent), farm power (76.66 per cent), economic motivation (64.58 per cent), mass media contact (79.75 per cent) and risk taking ability (79.16 per cent). Majority of the respondents had low level of contact with extension agencies (63.75 per cent) and social participation (73.75 per cent). As regards to level of knowledge only 22.50 per cent respondents had high knowledge level of mustard technology.

Adoption of technology

Results (Table 1) revealed that majority of the small and medium farmers were low to medium adoptors of all the package of practices of mustard technology except improved varieties in case of the medium farmers. While majority of the large farmers were found to high adoptors of different package of practices except plant protection measures.

Table 1. Extent of Adoption of Mustard Technology by Respective Categories of Farmers.

Sl. No.	Practices	Small farmers			Medium farmers			Large farmers		
		Low No.	Medium No.	High No.	Low No.	Medium No.	High No.	Low No.	Medium No.	High No.
1.	Land preparation and sowing	34 (38.33)	54 (45.00)	32 (26.67)	32 (40.00)	28 (35.00)	20 (25.00)	8 (20.00)	10 (25.00)	20 (55.00)
2.	Improved varieties	24 (20.00)	64 (53.33)	32 (26.67)	14 (17.50)	24 (30.00)	42 (52.50)	9 (22.50)	11 (27.50)	20 (50.00)
3.	Fert. application	65 (54.17)	25 (20.83)	30 (25.00)	37 (46.25)	18 (22.50)	25 (31.25)	5 (12.50)	16 (40.00)	19 (47.50)
4.	Irrigation pattern	63 (52.50)	40 (33.33)	17 (14.17)	34 (42.50)	28 (35.00)	18 (22.50)	5 (12.50)	12 (30.00)	23 (57.50)
5.	Plant protection measures	68 (56.67)	44 (36.67)	8 (6.66)	35 (43.75)	31 (38.75)	14 (17.50)	15 (37.50)	19 (47.50)	6 (15.00)

Figures in parentheses indicate percentage

Association of Farmers Characteristics with Adoption :

Based on the analysis (Table 2) it was found that eight factors such as education, annual income, farm size, farm power, farm experience, knowledge level, economic motivation and risk taking ability among others had significant positive impact on the adoption index in case of small farmers. But, the age was adversely related with the adoption index. This envisaged that younger farmers probably were daring to adopt mustard technology. Similarly Jha and Shakhawat (1972), Sarkar and Bandyopadhyay (1996) and

Veeraih et al. (1997) also found negative and significant relationship between age and adoption. However, none of the communicational variables showed any significant influence over the adoption. It appears that small farmers lacked the access to mass media contact. contact with extension agencies and social participation.

Table 2. Influence of some socio–economic and personal characteristics on the adoption of mustard technology by different categories of farmers.

Farmer's characteristics	Simle correlation coefficient (r)		
	Small	Medium	Large
Age	-0.466**	-0.490**	0.502**
Education level	0.780**	0.846**	0.824**
Size of family	-0.108	0.129	0.054
Family work force	0.091	-0.012	0.095
Annual income	0.532**	0.818**	0.694**
Farm size	0.262*	0.192	0.297
Farm power	0.340**	0.189	0.093
Occupation	-0.123	0.408**	0.362*
Farm experience	0.428**	0.362**	0.458**
Knowledge level	0.756**	0.458**	0.692**
Economic motivation	0.764**	0.857	0.889**
Risk taking ability	0.704**	0.815**	0.464**
Mass media contact	0.180	0.585**	0.702**
Extension contact	0.168	0.596**	0.132
Social participation	0.183	0.149	0.558**

* 'r' value significant at 5% level of significance.

** 'r' value significant at 1% level of significance.

Almost similar trend were recorded in case of medium farmers. However, family workforce, size of family, farm power and social participation did not show their significant relationship with adoption. But communicational variables like mass media contact and contact with extension agencies had shown significant and positive influence over adoption.

Among the large farmers; age, education, income, occupation, farm experience, knowledge level, economic motivation, mass media contact, risk taking ability and social participation were found to play profound role in adoption of mustard technology. The respondents having more social participation had greater interpersonal interaction which led them to adopt mustard technology to a larger extent.

It is evident from the foregoing results that six factors among others such as education, annual income, farm experience, knowledge level, economic motivation and risk taking ability were common to all categories of farmers exerting positive influence on the adoption of mustard technology. In fact the education implies the desirable changes in behaviour of the individuals giving favourable response in adoption of mustard technology. Farmers with higher income were economically better placed to meet the cost of technology. Higher the farming experience, higher would be the adoption wich may be explained in a manner that the farmers were stable and consistent enough pertaining to adoption of technology. Farmers having sound knowledge of mustard technology certainly would adopt

the technology more confidently. Economic benefit has always been a motivating force for mustard cultivation. Finally, the high risk takers definitely had qualities of optimising and courage that influenced greater adoption.

Constraints :

Among the several constrains perceived by the farmers, eight major problems were identified to be of much significance for the farmers of this state pertaining to adoption of mustard technology (Table 3). The most important factors was found to be free grazing. As long as this problem exhists farmers without security may be not spend their valuable time and money for adoption of mustard technology. This problem was followed by non availability of creadit in time, lack of irrigation facilities, crop damage due to early monsoon during harvesting period, lack of technological know-how, poor fertility of soil, high cost of fertilizers and plant protection chemicals and high cost of crop cultivation.

CONCLUSION

Findings of the study indicated that to secure better adoption younger farmers should be approached. Although, the majority of farmers were illiterate, enhancing agricultural knowledhe of farmers becomes imperative and can play important role towards adoption of mustard technology. This was obvious under present investigation showing significant positive correlation with adoption. To increase the agricultural knowledge extension agencies are required to provide proper technical know-how and farmers can be motivated with the help of different extension methods like training, field visits, discussions, demonstrations etc. for convincing the farmers to adopt mustard technologies. The relationship establlished in the present study between the selected independent variables and adoption could serve as guidelines to the extension agencies. There were a number of constraints experienced by the farmers, the state, central government, research, training institutions and non-government organistions need to remove these constraints by indentifying and providing suitable remedies/facilities.

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